

Mary Strong Clemens: a botanical collector in New Guinea (1935–1941)

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An itinerary of Mary Strong Clemens's New Guinea field work is here provided in order to clarify some inconsistencies that appear on the herbarium labels. The reliability of the locality details given on some of the specimens collected from the higher altitudes is sometimes questionable. Clemens paid her native collectors, offering them more money if they collected from higher elevations (Croft pers. comm., May 1988). Therefore, they may have found the temptation to exaggerate the altitude of a collection difficult to resist! In fact van Royen (1980) has suggested that she probably never visited the summit of Mt Sarawaket, although field information on some of her collections suggest that she may have. Furthermore, the Reverend G. Bergmann (then Lutheran Missionary, Boana) (pers. comm., 19 February 1977) believed that she had visited the summit of Mt Sarawaket. Indeed, *he* may have taken her to the summit (see caption to Fig. 1). In a letter to Miss Carrie Harrison (Brookland, Washington D.C., U.S.A.) Mrs Clemens writes from 'Near Timberline Camp' [Mt Sarawaket], 'Just arrived from the most strenuous 9 days hike of my life' (see caption to Fig. 2). It seems reasonable to suggest that she may have visited the summit of Mt Sarawaket on this occasion. Both photographs appear to record the same event. However, without her notebooks, it is not possible to confirm either point of view.

Mary Knapp Strong was born in New York (U.S.A.) on 3 January 1873 (based on her diary entry, as cited in Carter 1982, p. 168). She died at Chermside (Australia) on 13 April 1962, aged 95 (Langdon 1981). In 1896 she married Joseph Clemens who was born in Cornwall (England) in 1862. He died at Wareo (Territory of New Guinea, now Papua New Guinea) on 21 January 1936. Further biographical details are provided by Langdon (1981). Carter (1982) provides an itinerary of Clemens's Queensland (Australia) field work that was undertaken after she left New Guinea.

Joseph and Mary Strong Clemens arrived at Salamaua, in the (then) Mandated Territory of New Guinea on 16 August 1935. Joseph died of food poisoning (van Steenis-Kruseman 1950) a few months after their arrival (21 January 1936). This occurred on the Warco cart road (north of Sattelberg) as he was proceeding to a German Lutheran Mission conference in Finschhafen (Langdon 1981). Mary Clemens recorded the death of her husband on the label of Clemens 1668 (held at B), 'It was under this tree [*Myristica lancifolia* var. *clemensii*] that my soul companion for over 40 years of wedded life, bade me farewell for the higher life.' (Sinclair 1968, p. 465). She dauntlessly continued as a botanical collector until the

Japanese military invasion of New Guinea made it necessary for her to be hurriedly evacuated to Australia on 26 December 1941.

Mary Clemens collected almost exclusively in the Morobe Province, and mostly on the Huon Peninsula where she made about 14,000 collections of plants. In September 1939 she made a brief visit to the Upper Ramu River area of the Madang Province. Her New Guinea collections were sent to Botanischer Garten und Botanisches Museum Berlin-Dahlem (B), Berlin, BRD (much of which was destroyed but duplicates have survived elsewhere) until 1939. Hiepko (1987) recorded that between 1935 and 1939, B received 8,772 numbers of M. S. Clemens's New Guinea collections (with duplicates), of which about 2,600 numbers (with duplicates) survived. From 1939 until 1941, she sent her specimens to the Herbarium of the University of Michigan (MICH), Ann Arbor, Michigan, U.S.A. (Frodin & Gressitt 1982). Her subsequent Australian collections (from 1943 through 1950) were also sent to MICH (Carter 1982). It is assumed that the notebooks which recorded her daily activities up to mid-1941, together with the plant collections that were to be despatched to MICH, remained in New Guinea when she was evacuated from Lae (26 December 1941). These collections were abandoned at Lae, and possibly at Boana or Finschhafen when transport was not available during the Second World War. Some of Clemens's New Guinea collections are held at the National Science Museum, Tokyo, Japan (TNS) and the Herbarium of the Kyoto University (KYO). It was assumed by van Royen (1980), and Frodin & Gressitt (1982) that these represented some of the abandoned collections that had been taken by the Japanese when they occupied Papua New Guinea. It is not known how or when Clemens's collections arrived in Japan, but some of the specimens that are now held by TNS may have been donated by the Herbarium of the Swedish Museum of Natural History, Stockholm, Sweden (S) because they have a Stockholm label on them (Inoue, pers. comm., 30 August 1988). Frodin & Gressitt (1982) reported that her collections have also been located at the Herbarium of the University of Tokyo (TI). However, Iwatsuki (pers. comm., 28 June 1988) states that 'we [TI] have no specimens collected by Mrs Clemens nor original materials [notebooks] of her.' TNS has 105 unnumbered specimens of bryophytes (Inoue pers. comm., 2 July 1988). Only a few of these collections have been critically studied (Noguchi 1953).

In 1983, a pre-war loan of 326 sheets of ferns were returned to B from BM. A list of these collections



Fig. 1. Mary Strong Clemens. The back of the photograph has written in Clemens's hand, '10-12 000 ft elevation Camp, Morobe Distr[ict], New Guinea. Taken by Rev. G. Bergmann Lutheran Missionary from Boana Sta[tion]. He was taking a party up Mt Sarawaket 13,500-14,000 ft. About yr. [year] 1939-1940. M.S. Clemens.' Photograph probably taken at or near the 'Timberline Camp', Mt Sarawaket, May-June 1939.

(Anon. 1982) was distributed to several herbaria, including B, BM, BRI, CANB and NSW (Jermy pers. comm., 12 August 1988).

Mary Clemens numbered her New Guinea collections from 1 onwards. Her New Guinea phanerogam collections (held at B) begin with the number 3 (August 1935) and end with the number 10,105 (3 April 1939) (Hiepkö pers. comm., 18 July 1988). However, the specimens were not numbered at the time of gathering. Hence, the numbering of her collections has created various problems. Some of the numbers are mixed collections and others are not in chronological order. Her fern collections, as listed in Anon. (1982) for the period of October 1935 until June 1938, appear to be more inconsistently numbered than her other collections. It appears that the fern collections from a particularly area (often gathered over several days) were frequently numbered as a group, distinct from the other collections. Native helpers often brought plant material back to her at a base camp where she numbered the specimens (van Royen 1980). Alaseu (see Fig. 2) was one New Guinean who assisted her on several occasions. He collected the ferns from Abe [exact locality not known, it is thought to be somewhere between Boana and Mt Sarawaket] in 1938 (Anon. 1938). Some collections were assigned numbers after they were despatched from New Guinea. Professor H. H. Bartlett (MICH) 'undertook the distribution and sale of duplicates in Mrs Clemens' behalf' (Carter



Fig. 2. Mary Strong Clemens and Alaseu, a field assistant. On the back of the photograph is the following typed letter from Clemens to a Miss Carrie Harrison of Brookland, Washington D.C., U.S.A. 'Near Timberline Camp, May-June, 1939. Note roof of tussock grass, and the wash-basin by Alaseu on the stump of tree fern. The mossy bush behind me has rusty *Rubus*, and rusty *Asplenium* [*Asplenium*], the pond has rusty *Viola* where the wallaby (marsupials) play. Pittosporums almost touch one end of the hut. Here grows my n. sp. of *Veronica* [*V. platycarpa*] described by Dr Pennell. *Podocarpus* and other conifers with oodles of heaths and lichens filled our baskets here, but this ancient, borrowed, Boana machine [referring to herself] declines to think more. Mary Strong Clemens.' She then added, 'Plane is due, this is just to acknowledge your letter with the astonishing prices for grass as I have given about a ton of alpine ones for naught. Just arrived from the most strenuous 9 days hike of my life. M.S.C.'

1982, p. 163). These collections are numbered from 40,598 to at least 41,963 (Anon. 1936-1941) and cover the years of 1939 to 1941.

The following itinerary is based on the collections held at the Queensland Herbarium (BRI), the University of Michigan (MICH) and information cited in selected publications that are listed in the references (below). The information provided in the itinerary include: dates (when known), collection localities, and Clemens's collection numbers (in square brackets). The collection numbers that are listed represent the known numbers. In most instances, they do not cover the full range of collections at any particular locality, for a certain date. The localities from which it is known that Clemens collected (i.e. collections seen or cited in publications) are marked by a solid triangle on the accompanying maps (Figs 3-7). Other localities are marked by a dot. The major areas of New Guinea that

were collected by Clemens (in alphabetical order) include: A-mieng, Boana, Finschhafen (north of present Finschhafen), Gaeng, Kaiapit, Kalasa, Kulungbufu, Lae, Malahang, Malolo, Matap, Mt Sarawaket, Musom, Ogeramnang, Quembung, Rawlinson Range, Salamaua, Samanzing, Sambangan, Sattelberg, Sugu, Tobou, Wantoat, Wareo, Wau, Yoangen and Yunzaing.

1935

AUGUST: 16 — Joseph and Mary Strong Clemens arrived at Salamaua, in the then Mandated Territory of New Guinea; **27** — collected at Malolo (also spelt Malalo) Mission (probably stayed there) and Salamaua [coll. 1-46]; **30** — Malahang [coll. 62 (Burret 1936)]; **31** — arrived Finschhafen (van Steenis-Kruseman 1950).

SEPTEMBER: no date — stayed at Heldsbach Plantation [coll. 103]; **20-30** — Sattelberg [coll. 173-204].

OCTOBER: 1-24 — Sattelberg [coll. ?169, 276-625].

NOVEMBER: 1-21 — Sattelberg [coll. 698-1015]; **26** -Sattelberg to Quembung [coll. 'suppl.', B (Danser 1938)].

DECEMBER: 1-3 — Sattelberg [coll. 1061-1098, 1221]; **6** — Sattelberg [coll. 1109 (Burret 1936)]; **11** — Quembung [coll. 1141-1275]; **13** — Quembung [coll. 1123, and possibly 1313-1494]; **19** — Sattelberg [coll. 1255]; **no date** — Sattelberg [coll. 1331]; **27-31** — Wareo [coll. 1356-1668].

1936

JANUARY: 1-17 — Wareo [coll. 1420-1717]; **29** — Sattelberg [coll. 1717-1742].

FEBRUARY: no date — Sattelberg [coll. 1760]; **4** — Wareo [coll. 1769-1838]; **7** — Wareo [coll. s.n., B (Danser 1938, p. 52)]; **15** — Sattelberg [coll. 1848-1859, 1891]; **no date** — Sattelberg, on trail to Wareo [coll. 1860].

MARCH: no date — Sattelberg [coll. 1927-1973]; **4-12** — Sattelberg [coll. 1950-2022]; **23-?** — Quembung Mission (sometimes spelt Fuembung) [coll. 2110-2168, 2183, 2200, 2238]; **no date** — Sattelberg [coll. 2173, 2186, 2225 (given as April), 2239].

APRIL: 7-9 — Sattelberg [coll. 2270-2281]; **18-25** — Yunzaing [coll. 2346-3004 (2379-2389 from Mt Aloki)]; **no date** — Sattelberg [coll. 3034-3078].

MAY: 12-? — Sattelberg [coll. 3080-3108].

JUNE: 2 — ?between Yunzaing and Yoangen [coll. 3189]; **8** — Yunzaing [coll. 3235]; **18** — between Yunzaing and Yoangen [coll. 3351-3381]; **22-23** — Yunzaing [coll. 3381A-3415]; **no date** — Yoangen [coll. 3426]; **25-26** — Yunzaing [coll. 3435-3460]; **no date** — Yunzaing [coll. 4193] (given as April); **27** — Yunzaing [coll. 4195B]; **29** — Sattelberg [coll. 3450], Yunzaing [coll. 3451-3523; date of coll. 3473 is cited as 18 June by Burret (1937)].

JULY: 1-31 — Yunzaing [coll. 3494-3749 (some numbers out of sequence)].

AUGUST: 1-6 — Yunzaing [coll. 3761-3810]; **11-25** — Yunzaing (sometimes spelt Junzaing) [coll. 3828-4074].

SEPTEMBER: 3-? — Yunzaing [coll. 4076-4148]; **no date** — Yunzaing [coll. 4183 & 4207]; **no date** — Finschhafen [coll. 4215].

OCTOBER: no known collections.

NOVEMBER: 16 — Yunzaing [coll. 4194]; **no date** — Malolo Mountains and Malolo Mission [coll. 4359-4412; 4372 is probably incorrectly dated the 12th (Burret 1943); 4404A incorrectly dated December; if the locality and date information is correct, Clemens must have visited Malolo before returning to Ogeramnang]; **no date** — Ogeramnang [coll. 4447 & 4463].

DECEMBER: 7-31 — Ogeramnang [coll. 4489-4803, 4809, ?4826-?4884, 5214; 4791 a mixed collection of *Myristica cucullata* from Ogeramnang (Sinclair 1968) and *Carpodetus major* from 'Kaile to Sarawaket' (Reeder 1946)]; **12-17** — between Ogeramnang and Malang [coll. 4635-4724]. Clemens collected in the Ogeramnang area throughout December and the numbering of these collections is not always chronological.

1937

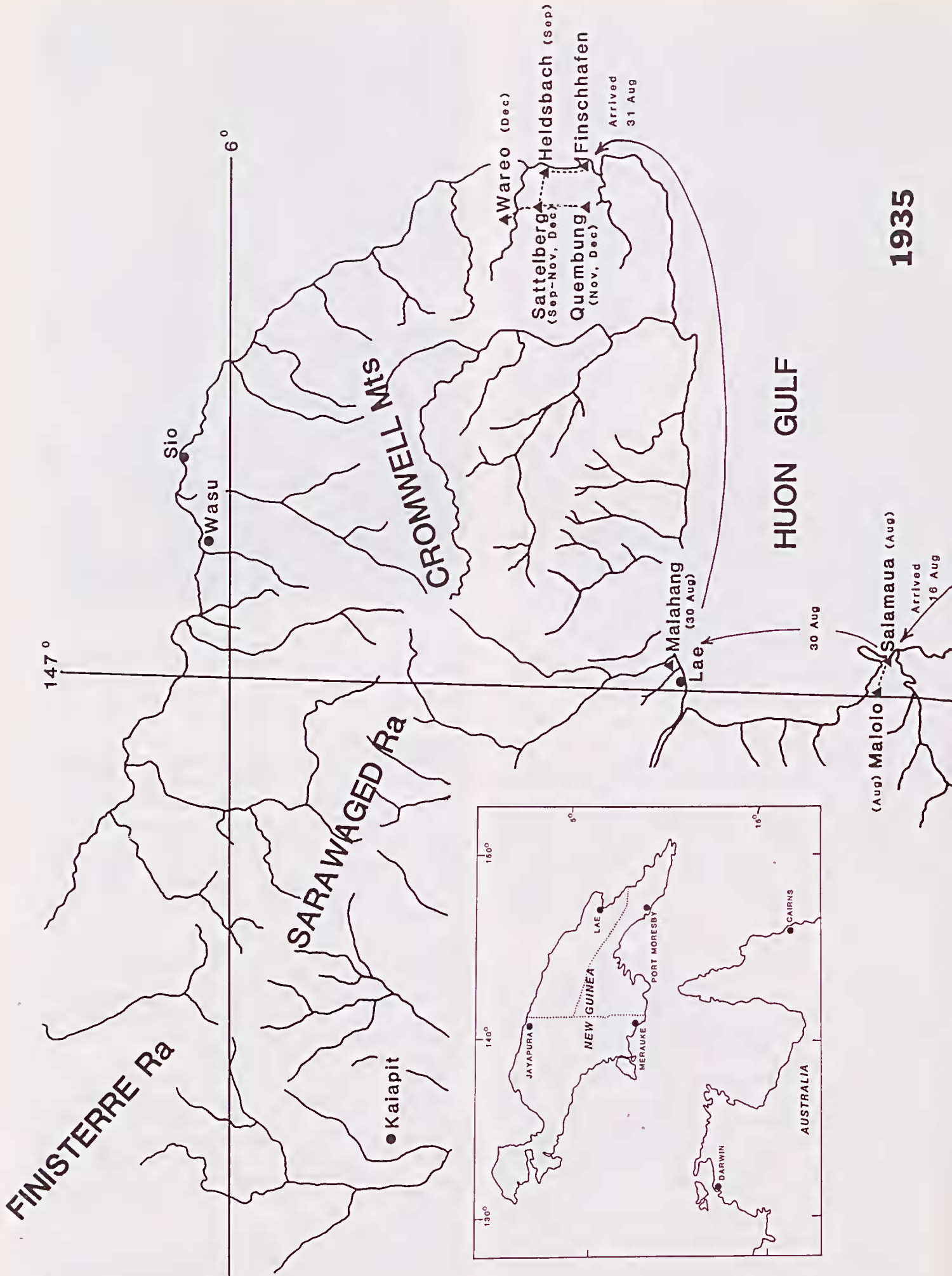
JANUARY: 1-9 — Ogeramnang [coll. 4827-4902]; **no date** — 'above Kaile, enroute to [Mt] Sarawaket' [coll. 4910]; **11** - Ogeramnang [coll. 4996 (Danser 1938) is not in chronological sequence]; **12** — Ogeramnang [coll. 4934-4955]; **no date** — 'Bulung River and Kaile' [coll. 4964]; **?(at least 14)-28** — Ogeramnang [coll. 4972-5200; coll. 5156 from Yunzaing cited as collected on '27.i.1937' (Danser 1938)]; **no date** — 'Nomanenem Camp, Bulung River' [coll. 5206]; **30** — locality not known, probably between Ogeramnang and Goliteng Camp] [coll. 5218]; **no date** — Camp Kilanda, on trail to Mt Sarawaket [coll. 5236]; **30** — Camp Busu Tamunac, Sarawaket [coll. s.n., B, L (Danser 1938)].

FEBRUARY: no date — Goliteng camp, Belum (?Bulum River), on trail to Mt Sarawaket [coll. 5247-5307]; **1** — Camp Busu Tamunac, Sarawaket [coll. s.n., B, L (Danser 1938)]; **8** — Ogeramnang [coll. 5326, 5327A & 5539]; **9** — Bulung River (sometimes spelt Butung River), near Ogeramnang [coll. 5337-5358]; **?(at least 12)-27** — Ogeramnang [coll. 5368-5475, 5483 & 5484, 5498-5536; 5487a dated February from Sattelberg is either incorrect locality or incorrect date].

MARCH: no date — Mt Sarawaket [coll. 5556-5575; 5573 is incorrectly dated June — Clemens in Yunzaing then]; **no date** — Mt Sarawaket [coll. 5666a, 5673 & 6120]; **no date** — Ogeramnang [coll. 5921 & 6040]; **no date** — Kaile [coll. 6038]; **31** — 'Bog meadow camp, Mt Sarawaket' [coll. 6157].

APRIL: specimens from Mt Sarawaket are not numbered in chronological order. **6** — Mt Sarawaket [coll. 5863]; **7** — 'Terminal camp, Mt Sarawaket' [coll. 5740]; **8** — summit of Mt Sarawaket [coll. 5642]; **no date** — Mt Sarawaket [coll. 5672 & 5733]; **10** — [on route from] 'Terminal camp to Bog meadow, Mt Sarawaket' [coll. 5814], and 'Trail below Terminal camp' [coll. 6194].

MAY: coll. 6269, 6274, 6275 & 6325 have been cited as from Busu or the Busu River by Smith (1944), Merrill & Perry (1941), Smith (1944), and Merrill & Perry (1948) respectively. The locality or date of these



1935

Fig. 3. Clemens's collecting localities in 1935.

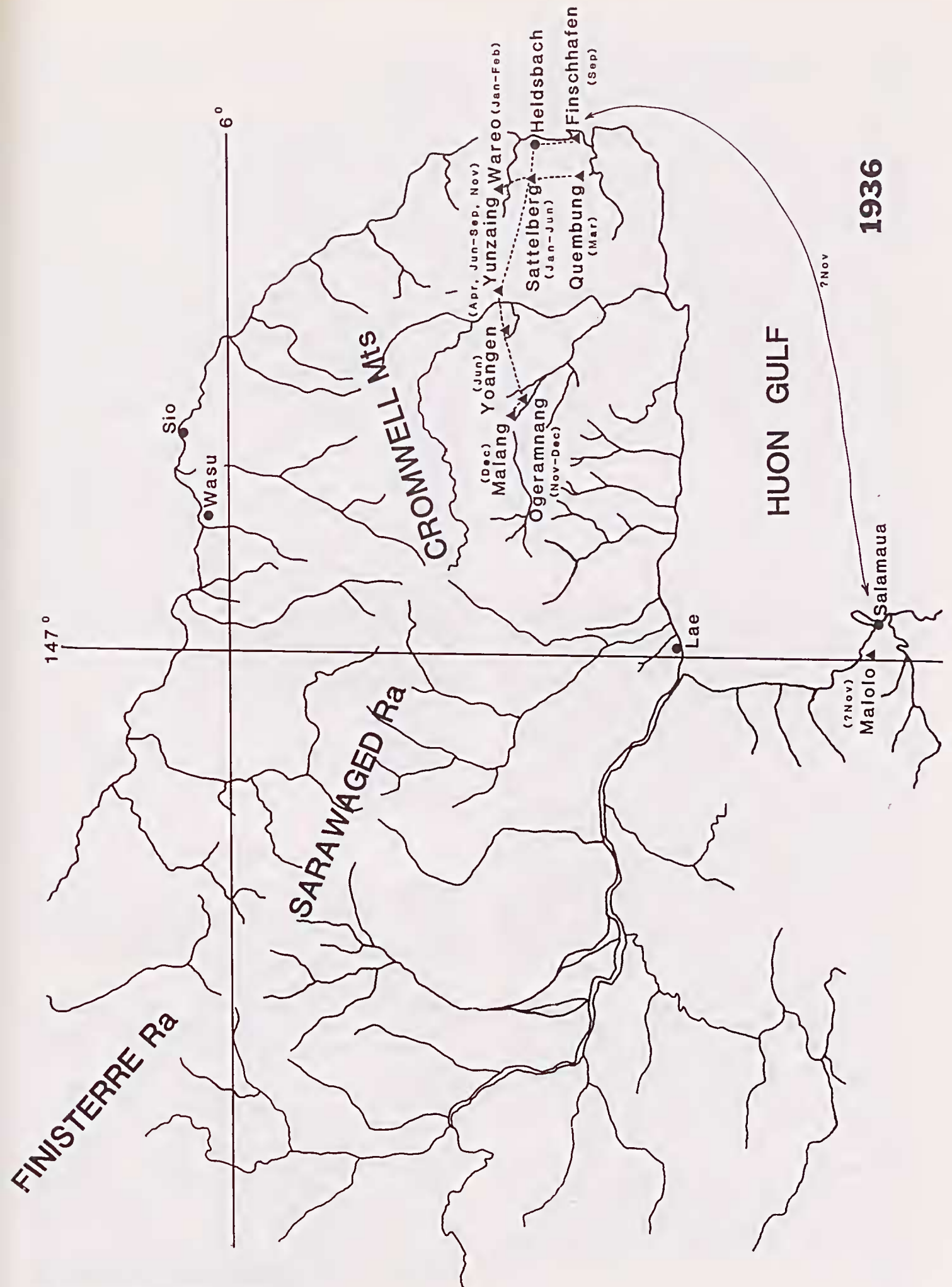


Fig. 4. Clemens's collecting localities in 1936.

collections appears to be incorrect. **12** — [coll. 6325]; **no date** — Ogeramnang [coll. 6357 & 6906].

JUNE: numbering, and/or dates and localities are very confused. Presumably, Clemens was returning from Ogeramnang to Sattelberg during June and July. She may have visited the villages of Kulungbufu, Tobou, Yoangen and Yunzaing several times. **?-21** — Yunzaing [coll. 6433-6471]; **no date** — Yoangen [coll. 6492]; **no date** — Tobou to Kulungbufu [coll. 6514]; **no date** — Kulungbufu (sometimes spelt Kulungtufu) [coll. 6520 & 6552]; **5** — Tobou [coll. 6543]; **no date** — Tobou [coll. 6557 & 6573]; **no date** — Yoangen [coll. 6587-6606]; **no date** — Yoangen to Mongi [River] [coll. 6613]; **14** — Yoangen [coll. 6616].

JULY: no date — Kulungbufu [coll. 6617A-6650].

AUGUST: it is presumed that Clemens travelled by boat from Finschhafen to Wasu or Sio during July or August and then walked or was driven to Sambangan. Clemens acknowledges that many of the collections were made by New Guinea assistants. Several collections are not numbered in chronological order. **10** — 'Steep hills near village [?]' [coll. 6689]; **14** — Iloko (spelt as 'Iloco') [coll. 6714]; **17-31** — Sambangan [coll. 6735-6884].

SEPTEMBER: 1-18(-?) — Sambangan (these are frequently cited as 'Sambanga Mt, Sattelberg' or 'Sambanga, Sattelberg') [coll. 6897-7188]; **29** — Timbe River trail, Sambangan [coll. 7204 & 7205]; **30** — Sambangan [coll. 7231 & 7232].

OCTOBER: numbering and/or dates are very confused. **1** — Sambangan [coll. 7241-7244]; **5** — base of Mt Sarawaket [coll. 7345 & 7347]; **15** — 'Waterfalls by big lake [?Lake Gwam], Mt Sarawaket' [coll. 7346 & 7351]; **17** — 'Under tussock grass, ... near our rockwall tent, Mt Sarawaket' [coll. 7352 & 7352A]; **19** — 'near rockwall' '& lake', Mt Sarawaket [coll. 7343 (possibly collected on the 18th), 7348 & 7355]; **20** — Mt Sarawaket [coll. 7430]; **22-23** — Timbe River trail, Sambangan [coll. 7256 & 7257, 7438-7440, 7453, 7462]; **no date** (probably 22th or 23rd) — Timbe River, Sambangan [coll. 7562A]; **25-30** — Sambangan [coll. 7259, 7417, 7440A, 7445, 7446, 7456a].

NOVEMBER: 1-5 — Sambangan [coll. 7473, 7475A (given as 29 October) & 7492A, & 7949 Suppl.]; **9** — 'River [Masak] margin below village', Sambangan [coll. 7520, 7521, 7528, 7532, 7542], [presumably the Masak River area, near Sambangan, at the base of] 'Mt Sarawaket' [coll. 7550], Masak River [coll. 7550B]; **16-30** — Sambangan, including Timbe River on the 25th and 30th [coll. 7608-7810b].

The numbering of the fern collections (Anon. 1982) is not in chronological order, and the range of numbers is as follows: **16** — [coll. 7657-7680]; **17** — [coll. 7616 & 7617]; **18** — [coll. 7642-7649a]; **23** — [coll. 7710-7718a]; **24** — [coll. 7721a, 7727 & 7864a Suppl.]; **25** — [coll. 7736-7743bis]; **26** — [coll. 7746-7776, & 7824 Suppl.]; **28** — [coll. 7781]; **30** — [coll. 7794-7809].

DECEMBER: 3 — Sambangan [coll. 7838 ?Suppl., 7849bis, 7949 Suppl.]; **6** — Koeg and Kock rivers, Sambangan [coll. 7857-7878bis Suppl., & 7900]; **9** — Masak River, Sambangan [coll. 7882A-7898A]; **20** — Sio [coll. 7988-8000]; **no date** — Clemens presumably travelled by boat to Sialum and then on foot to Kalasa.

1938

Clemens returned to Sattelberg (presumably by boat from Sialum to Finschhafen) between January and March 1938.

JANUARY: 1-10 — stayed at the Mission station in Kalasa and all known collections for January were from here. **no date** — [coll. 7902C]; **3** — [coll. 7956 & 7957]; **4** — [coll. 7987 (Burret 1940)] [number out of sequence]; **6** — [coll. 7923 & 7980L].

FEBRUARY: no collections known.

MARCH: 15 — Wareo [coll. 8052]; **?24-29** — Sattelberg [coll. 8062-8068].

APRIL: 12 — Quembung Trail [coll. 8104] possibly proceeding to Finschhafen. Mid April to May, Clemens travelled to Malahang or Lac, presumably by boat. She then proceeded to Boana, probably by vehicle via the Markham Valley Highway; **30** — Boana (coll. 8141 (Burret 1940)).

MAY: 4-6 — Bonzok River, to the west of Boana [coll. 8083, 8179-8186]; **?- 29** — Boana, including Mt Boana [coll. 8219-8296].

JUNE: 15-18 — 'Abe, Sarawaket' mostly collected by Alaseu. Clemens noted that Abe is 'the last "helper" station of this distr[ict]' (Anon. 1982), presumably between Boana and Mt Sarawaket [coll. 4349a, 8328a-8360a (a mixed collection) & 8360B]; **19** — Boana [coll. 8299a (number out of sequence)].

JULY: 1 — Boana Hills [coll. 8386]; **11-18** — locality unknown. These collections may have been from either the Boana area or between Boana and Lac, and/or Samanzing [coll. 8444-8494]; **26** — Boana [coll. 8542 (Burret 1940)].

AUGUST: no collections known.

SEPTEMBER: no collections known.

OCTOBER: 27 — Samanzing [coll. 9132 (Burret 1943)].

NOVEMBER: no date — Samanzing [coll. 9218-9913]; **no date** — Upper Camp, Mt Sarawaket [coll. 9919-10078c].

DECEMBER: 13 — vicinity of Samanzing.

1939

Clemens remained in the Mt Sarawaket area until early July (based on her collections as held by MICH and those cited by Noguchi 1953). It is presumed that she was in Lae during July and travelled to Kaiapit via the Markham Valley Highway.

JANUARY: no collections known.

FEBRUARY: 28 — Mt Sarawaket [coll. s.n., TNS]

MARCH: 22 — Mt Sarawaket [coll. s.n., TNS]; **27-29** — Upper Camp A, Mt Sarawaket [coll. 10083-10090].

APRIL: 4-27 — Mt Sarawaket [coll. s.n., TNS].

MAY: 3-6 — Mt Sarawaket [coll. 10216-10238]; **12-30** — Mt Sarawaket [coll. s.n., TNS].

JUNE: 8-12 — Mt Sarawaket [coll. s.n., TNS]; **26** — Ogao [Mt Sarawaket] [coll. s.n., TNS].

JULY: 5 — Samanzing to Milulunga area [coll. 10433-10436, 40606-40614]; **7** — Musom (often spelt Mosum) [coll. 10436T-10438]; Musom to Lae [coll. 10439, 40617 & 40618]; Lae vicinity [coll. 10440]; **12** — Malahang [coll. 10441]; **13-17** — Lae [coll. 10443-10455, 40615 & 40616 (Busu River)]; coll.

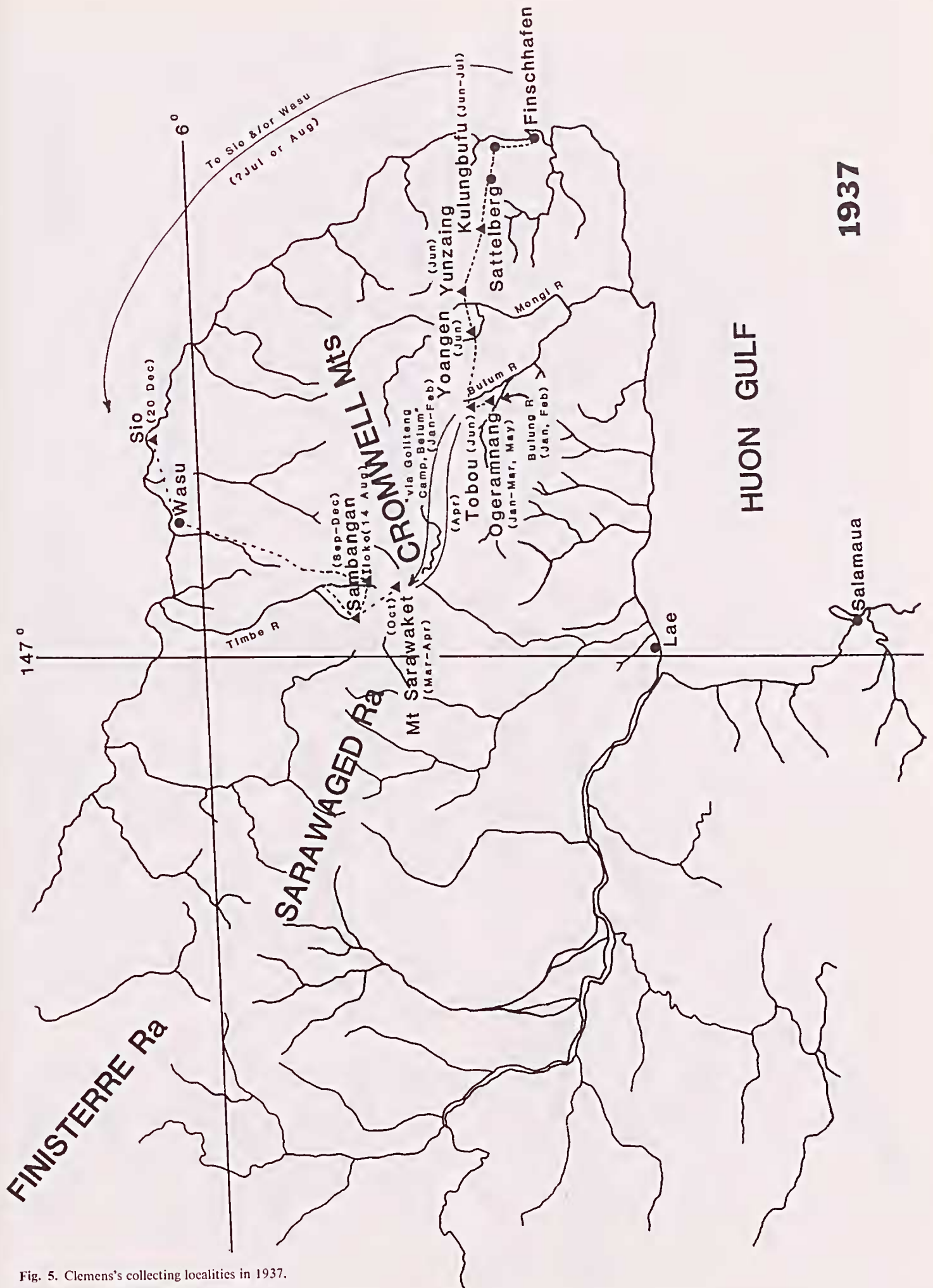
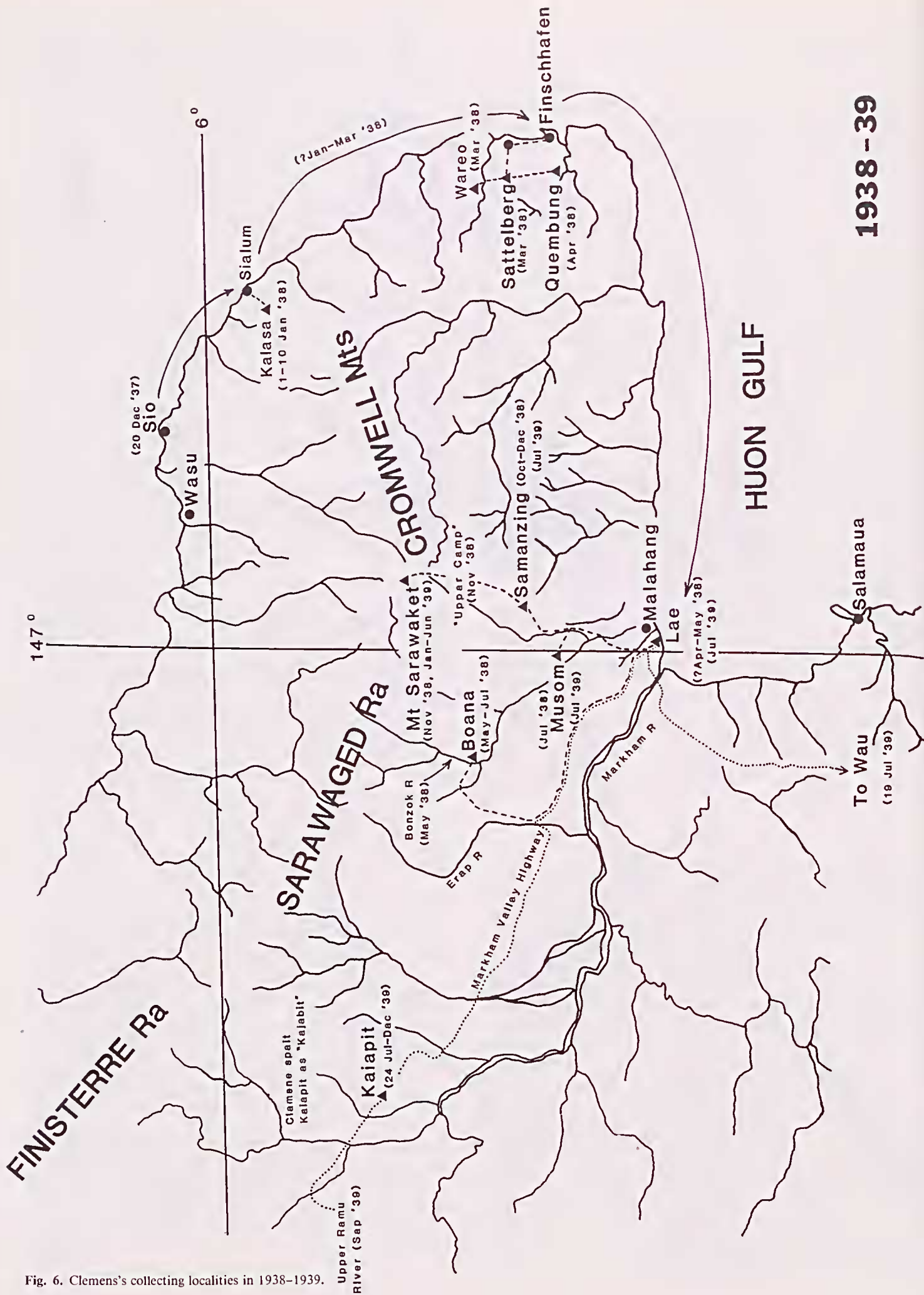


Fig. 5. Clemens's collecting localities in 1937.



1938 - 39

Fig. 6. Clemens's collecting localities in 1938-1939.

10455 (BR1) incorrectly cited as being collected during August, however, she was in Kaiapit then. The field note on coll. 10444R (MICH) states that it was collected on 15 September; 19 — Wau [coll. 10456-10459bis, 40619-40622]; 20 & 21 — Lac [coll. 10460-10469bis, 40623 & 40623a]; 24-31 — Kaiapit (Clemens spelt it 'Kajabit') [coll. 10471-10523Z, 40624-40651].

AUGUST: 1-31 — Kaiapit¹ [coll. 10524-10634, coll. 10597 (MICH) collected 12 August]; 1-9 — [coll. 40652-40682, 40726a-40729]; 9 — Markham Valley, near Kaiapit [coll. 40683-40685]; 10-17 — Kaiapit [coll. 40685-40702, 40730, 40845]; 22-26 — [coll. 40731-40739]; 30 — [coll. 40729a, 40740 & 40741]; 31 — [coll. 10635-10648, 40742-40744].

SEPTEMBER: 1-30 — [coll. 10649-10708M, 10723-10725, 10735-10737 (numbers out of sequence), 40658, 40745-40750, 40778-40785]; 6 — [coll. 40751-40754]; 11 — [coll. 40755]; 14 — [coll. 40756 & 40757]; 18 — [coll. 40757a-40762]; 20 — [coll. 40763-40768]; 21 — [coll. 40769]; 24 — [coll. 40771 & 40772]; 25 — [coll. 40773-40774]; 28 — [coll. 40775-40777]; no date — Kaiapit to Ramu [coll. 10726-10728, numbers out of sequence]; no date — Upper Ramu (River or Valley — actual locality not known) [coll. 10729 & 10730 (numbers out of sequence), 10738-10744bis (numbers out of sequence)].

OCTOBER: 1-3 — [coll. 10709-10722]; 1 — [coll. 40786 & 40787]; 3 — [coll. 10731-10734, 40788-40802]; 5-31 — [coll. 10745-10807]; 8 — [coll. 40803 & 40804]; 12 — [coll. 40805-40807]; 13 — [coll. 40808]; 16 — [coll. 40809-40812]; 18 — [coll. 40813 & 40814]; 19 — [coll. 40815 — 40817]; 20 — [coll. 40818-40821]; 23 — [coll. 40822]; 26 — [coll. 40823 & 40824]; 27 — [coll. 40825]; 31 — [coll. 40826].

NOVEMBER: 1-30 — [coll. 10808-10856]; 3 — [coll. 40827 & 40728]; 6 — [coll. 40829]; 12-14 — [coll. 40830 & 40831]; 17 — [coll. 40832]; 19 — [coll. 40833]; 20 — [coll. 40834]; 22 — [coll. 40835]; 23 — [coll. 40836-40837a]; 25 — [coll. 40838-40838b]; 30 — [coll. 40839].

DECEMBER: 1-25 — [coll. 10857bis-10914, 40840 & 40841; coll. 10876 (BR1) incorrectly cited as collected in August]; 12 — [coll. 40842-40847; coll. 40844 (*Dioscorea esculenta*) distributed as 40843]; 15 — [coll. 40848 & 40849]; 18 — [coll. 40850 & 40851]; 20 — [coll. 40852 & 40853]; 21 — [coll. 40854-40855]; 25 — [coll. 40856]; 27 — [coll. 40857]; 29 — [coll. 40858].

1940

JANUARY: no date — Kaiapit to Dantap [coll. 10916]; no date — Dantap vicinity [coll. 10917]; 4 — above Dantap and Kaiapit [coll. 10918]; no date — Dantap to ?Yukmak [coll. 10919]; no date — above Dantap and Kaiapit [coll. 10922 & 10923bis]; no date — Wantoat² [coll. 10923, 40859-40861, 40865-40896]; 4 — [coll. 40862]; 8-31 — [coll. 10924-11065; coll. 10951 (A) cited as collected in 'January 1941' by Merrill & Perry (1948)]; 9 — [coll. 40862a-

40864]; 10 — [coll. 40864a-40866]; 12 — [coll. 40867-40873]; 15 — [coll. 40874-40875]; 18 — [coll. 40876-40878]; 19 — [coll. 40879]; 20 — [coll. 40880-40883]; 22 — [coll. 40884]; 23 — [coll. 40885]; 24 — [coll. 40886-40893]; 25 — [coll. 40894-40896]; 26 — [coll. 40897]; 27 — [coll. 40898-40903]; 29 — [coll. 40904].

Clemens collected from Wantoat and Matap on several separate occasions, before visiting Boana.

FEBRUARY: 1-28 — [coll. 11066-11098a]; no date — Matap [position of Matap not known except that it is 'between Wantoat and the Range' (Frodin pers. comm., 1 July 1988)] [coll. 11099-11119A]; no date — Wantoat [coll. 11120]; 1 — [coll. 40905-40911a]; 2 — [coll. 40912 & 40912a]; 3 — [coll. 40913-40916]; 4 — [coll. 40917]; 5 — [coll. 40918-40926]; 6 — Matap [coll. 40927-40932]; 10 — Matap [coll. 11121]; no date — Wantoat [coll. 11122 & 11123]; 12 — Matap [coll. 11124 & 11124bis]; 12 — Wantoat [coll. 40933 & 40934]; 13 — Matap [coll. 11127]; no date — Wantoat [coll. 11127A]; no date — Matap [coll. 11127bis-11135a]; no date — Wantoat [coll. 11137-11147]; no date — Matap [coll. 11148]; no date — Wantoat [coll. 11149-11150]; 13 — Wantoat [coll. 40935]; 15 — [coll. 40937]; 19 — Matap [coll. 11151]; 19 — Wantoat [coll. 11151F]; no date — Matap [coll. 11152-11158c]; 21 — Wantoat [coll. 40938]; 22 — [coll. 40939]; 23 — [coll. 40940]; 24 — [coll. 40942 & 40943]; 27 — [coll. 40944-40946]; no date — [coll. 11124A-11126]; no date — [coll. 11159-11162]; no date — Matap [coll. 11163-11166]; no date — Wantoat [coll. 11167-11170]; no date — Matap [coll. 11171-11187]; no date — Wantoat [coll. 11188B-11200, 11220-11225A].

MARCH: no date — Matap [11200bis-11220; Reeder (1946) cited the locality of coll. 11211 (actually 11211bis) as Ogeramngang, but should be corrected to Matap]; no date — Wantoat [coll. 11221 & 11221bis]; no date — Matap [coll. 11221a, 40947-40951]; no date — Wantoat [coll. 11222, 11222A, 11223, 40952]; no date — Matap [coll. 11224-11257, 40953 & 40953a]; no date — Wantoat vicinity [coll. 40954 & 40955]; no date — Matap [coll. 40956-40967]; 1 — Matap [coll. 40968-40972, 40974-40976]; 1 — Wantoat [coll. 40973, 40977]; 2 — Matap [coll. 40978]; 2 — Wantoat [coll. 40979]; 3 — Matap [coll. 40980 & 40981]; 5 — Matap [coll. 40982 & 40983]; 6 — Matap [coll. 11258, 40984-40987]; no date — Matap [coll. 11260-11266]; 9 — Matap [coll. 11272]; no date — Matap [coll. 11275-11310A]; no date — Wantoat [coll. 11311]; no date — Matap [coll. 11311bis-11322H]; no date — Wantoat [coll. 11323]; no date — Matap [coll. 11323a-11324e]; no date — Wantoat [coll. 11325-11326B]; no date — Matap [coll. 11327 & 11327a]; no date — Wantoat [coll. 11328-11331]; no date — Wantoat [coll. 11333Z, number out of sequence]; no date — Matap [coll. 11334, number out of sequence]; no date — Wantoat [coll. 11334D, 11336, 11336B, numbers out of sequence]; no date — Matap [coll. 11337, number out of sequence]; no date — Wantoat [coll. 11338, number out of sequence]; 12-15 — Matap [coll. 40988-41056]; 21 — Matap [coll. 41057-41059]; 22 — Matap [coll. 41060-41062]; 23 — Matap [coll. 41063 & 41064]; 25 — Matap [coll. 41065]; 26 — Matap [coll. 41066-41068]; 27 — Wantoat [coll. 41069 & 41070]; 27 — Matap [coll. 41071-41078]; 29

1 All the following collections are from Kaiapit, unless otherwise stated.

2 All the following collections are from Wantoat, unless otherwise stated.

— Wantoat [coll. 41079–41090]; 30 — Matap [coll. 41091 & 41102]; 30–31 — Wantoat [coll. 41092–41101].

APRIL: no date — Wantoat [coll. 41103 & 41104, 41107–41109]; **no date** — Matap [coll. 11332–11333d, 11335–11335h (incorrectly labelled 11135 at MICH), 11338bis–11341bis]; **no date** — Ulap Trail, Matap vicinity [coll. 11342–11345, 41105]. The Ulap Trail appears to be a walking track across the Sarawaged Range, presumably linking Matap, Boana, Sambangan with Ulap; 2 — Matap [coll. 41112 & 41113]; 3 — Wantoat [coll. 41114a & 41114b]; 4 — Matap [coll. 41118–41119a]; 5 — Matap [coll. 41120 & 41120a]; 6 — Matap [coll. 41115–41116a]; 6–7 — Ulap Trail, Matap vicinity [coll. 11346 & 11346A, 41121–41169]; ?6 — Ulap Trail [coll. 11347–11349]; 6 — Wantoat [coll. 41170]; 8 — Matap [coll. 11352, number out of sequence]; 11 — Wantoat [coll. 11350 & 11351, 41170–41175]; ?11 — Wantoat [coll. 11353 & 11354]; **no date** — Matap [coll. 11355A]; **no date** — Wantoat [coll. 11356–11358]; 12–16 — Wantoat [coll. 41176–41192, 41194, 41205]; 16 — Matap [coll. 41193, 41196–41204, 41206]; 16 — Ulap Trail [coll. 41195]; 17 — Wantoat [coll. 41207–41209; 41216 & 41217]; 17 — Matap vicinity [coll. 41210–41215c]; 19 — Matap [coll. 41218–41228, Merrill & Perry (1948) cited the locality of coll. 41125 as the Ulap Trail]; **no date** — Ewot (= ?Ewok) to Wanimbun [coll. 11360]; 22 — Ewot (= ?Ewok) [coll. 41232–41237]; 23 — Ewot (= ?Ewok) [coll. 41238]; 23 — Ewot (= ?Ewok) to Wanimbun [coll. 40703–40705, 41246, 41248]; 23 — Wanimbun [coll. 41239–41243]; 23 — Galumbu (= ?Gumi-Garambin) [coll. 41244]; 23 — Ewot (= ?Ewok) to Rumu River (the Rumu River flows between Wanimbun and Gumi-Garambin) [coll. 41245]; 23 — Wanimbun to Galumbu [= ?Gumi-Garambin] [coll. 41247]; 23 — Wanimbun (Rumu River) [coll. 41249 & 41250]; 24 — Galumbu (Rumu River) (= ?Gumi-Garambin) [coll. 41253]; 24 — Wanimbun to Galumbu (= ?Gumi-Garambin) [coll. 41254–41254d, 41256]; 24 — Galumbi (= ?Gumi-Garambin) [coll. 41255]; 25 — Finungwa (cited as Finangan by Clemens) [coll. 40706]; 25 — Galumbu (= ?Gumi-Garambin) [coll. 41257–41258]; 25 — Galumbu (= ?Gumi-Garambin) to Finungwa [coll. 41259 & 41260]; **no date** (?26) — Labisap (cited as Lapisap by Clemens) [coll. 11365, number out of sequence]; 26 — Labisap [coll. 41262, 41264, 41266 & 41273]; 26 — Finungwa to Labisap [coll. 41265 & 41267]; 27 — Labisap to Kisengam (cited as Kesengen by Clemens) [coll. 41268 & 41270]; 27 — Kisengam to Sugu [coll. 41271 & 41277]; 27 — Kisengam [coll. 41272]; 28 — Finungwa [coll. 40710]; 25–28 — Sugu vicinity [coll. 41274]; 25–27 — Labisap vicinity [coll. 41298]; 26–27 — Labisap to Sugu [coll. 41276]; 28 — Kisengam [coll. 41278]; 28 — Sugu [coll. 41280 & 41281]; 28 — Sugu to Gaeng (Patrol Post) [coll. 41282]; 29 — Kisengam to Sugu [coll. 40713]; 29 — Sugu to Gaeng [coll. 41287, 41284–41291]; **no date** (= ?29) — Gaeng (also spelt Gain) [coll. 40714, 40715, 41295]; 29 — Gaeng [coll. 41283, 41292]; **no date** (= ?29) — Gaeng [Patrol] Station (also spelt Gain) [coll. 40714, 40715, 30 — Gaeng [coll. 41295 & 41296]; 30 — Gaeng to Boana [coll. 11359 (number out of sequence), 40716, 41293, 41294 & 41300]; 30 — Boana [coll. 41297, 41299 & 41299a].

MAY: no date [2–31] — Boana³ [coll. 11361–11364, 11366–11369; Merrill & Perry (1948) cite coll. 11366 (A) as being collected from Ewat (= ?Ewok) in April; 41304–41310; (the locality of coll. 41311 & 41311a, given as Rawlinson Range)]; 2 — [coll. 41312–41314]; 3 — [coll. 40717, 41117, 41315–41322]; 4 — [coll. 41323]; 6 — [coll. 40718, 41324–41331]; 7 — [coll. 41332]; 8 — [coll. 41333 & 41334]; 9 — [coll. 40719–40722a, 41335–41344]; 10 — [coll. 41337 & 41348]; 15 — [coll. 40723, 40724, 41349–41371]; 18 — [coll. 40725, 40726, 41372 & 41373]; 21 — [coll. 41415 & 41416]; 23 — [coll. 41417–41421]; 26–27 — [coll. 41422]; **no date** [?29] — Malahang [coll. 41423 & 41424].

JUNE: no date — Boana³ [coll. 11370, 41425–41428]; 2 — [coll. 41429 & 41430]; 4 — [coll. 41431]; 5 — [coll. 41432–41434]; 6 — [coll. 41435]; 7 — [coll. 41436–41439]; 8 — [coll. 41440 & 41441]; 11 — [coll. 41442–41445]; 12 — [coll. 41446–41450]; 13 — [coll. 41451]; 14 — [coll. 41452–41457]; 16 — [coll. 41458 & 41450a]; 18 — [coll. 41459–41464a]; 19 — [coll. 41465]; 20 — [coll. 41465a–41467]; 21 — [coll. 41468 & 41468a]; 25 — [coll. 41469–41478]; 26 — [coll. 41479]; 27 — [coll. 41480–41489a]; 29 — [coll. 41490–41494].

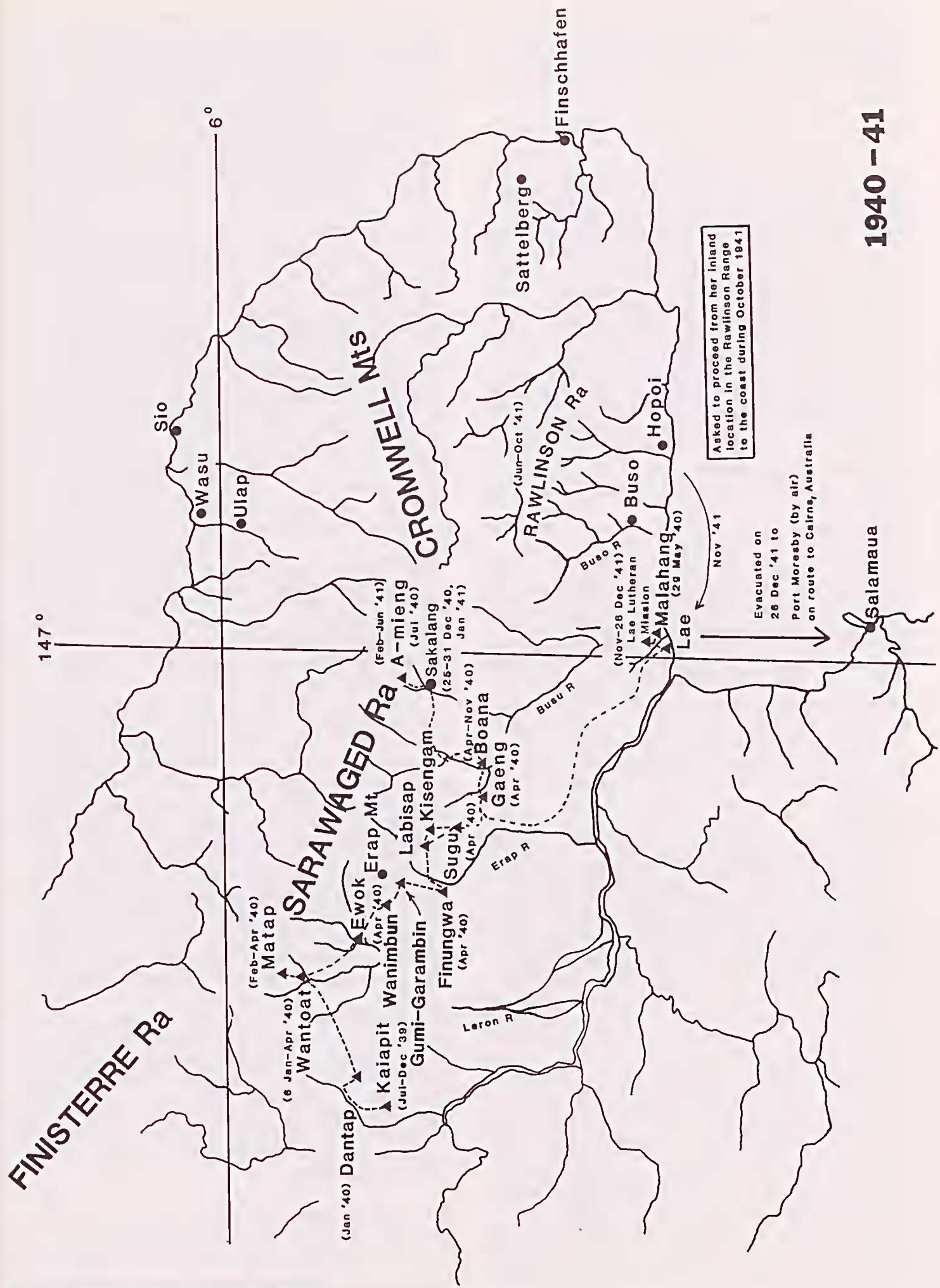
JULY: 1 — [coll. 41496–41506]; 2 — [coll. 41507–41511]; 3 — [coll. 41512–41515]; 4 — [coll. 41516–41551A]; 6 — [coll. 41552]; 8 — [coll. 41553–41579]; 12 — [coll. 41580–41594]; 15 — [coll. 41595 & 41596]; 16 — [coll. 41597–41601]; 18 — [coll. 41602–41609]; 20 — [coll. 41610–41614]; 23 — [coll. 41615]; 25 — [coll. 41616–41621]; 26 — [coll. 41622–41626]; 27 — [coll. 41627 & 41628]; 29 — [coll. 41629–41632]; 30 — [coll. 41633–41646]; **no date** — [coll. 41647–41652].

AUGUST: no date — [coll. 11371]; 2 — [coll. 41653–41660]; 3 — [coll. 41661–41670a]; 6 — [coll. 41671–41673]; 8 — [coll. 41674–41680]; 9 — [coll. 41681–41686a]; 10 — [coll. 41687]; 12 — [coll. 41688]; 13 — [coll. 41689–41712]; 14 — [coll. 41713 & 41714]; 16 — [coll. 41715]; 17–19 — [coll. 41716 & 41717]; 19 — [coll. 41718–41724]; 20 — [coll. 41725]; 22 — [coll. 41726–41735]; 24 — [coll. 41736–41741]; 25 — [coll. 41742–41742c]; 26 — [coll. 41743–41751]; 26–28 — [coll. 41751a]; 27 — [coll. 41752 & 41753]; 28 — [coll. 41755–41759]; 29 — [coll. 41760–41765]; 30 — [coll. 41766 & 41767]; 31 — [coll. 41768–41774].

SEPTEMBER: no date — [coll. 11372, 11373, 41775–41779]; 2 — [coll. 41780 & 41781]; 3 — [coll. 41782–41788]; 5 — [coll. 41789–41795]; 6 — [coll. 41796]; 6–7 — [coll. 41797]; 7 — [coll. 41798–41811]; 10 — [coll. 41812–41815]; 12 — [coll. 41816–41824]; 16 — [coll. 41825–41827]; 17 — [coll. 41828–41835a]; 19 — [coll. 41836]; 20 — [coll. 41837–41841]; 21 — [coll. 41842]; 22 — [coll. 41843]; 23 — [coll. 41844]; 24 — [coll. 41845–41853]; 25 — [coll. 41854]; 26 — [coll. 41855 & 41856]; 27 — [coll. 41857]; 28 — [coll. 41858–41861].

OCTOBER: 1 — [coll. 41862 & 41863]; 2 — [coll. 41864–41869]; 8 — [coll. 41870–41880]; 10 — [coll. 41881–41883]; 12 — [coll. 41884]; 15 — [coll. 41885 & 41885a]; 16 — [coll. 41886]; 21 — [coll. 41887]; 23 — [coll. 41888]; 24 — [coll. 41889–41891]; 30 — [coll. 41892–41901].

3 All the following collections are from Boana, unless otherwise stated.



1940 - 41

Fig. 7. Clemens's collecting localities in 1940-1941.

NOVEMBER: no date — [coll. 11379–11437]; 13 — [coll. 41902]; 14 — [coll. 41903–41911].

DECEMBER: no collections known; 25–31 — Sakalang Teacher Station (Clemens corresp., 31 Dec. 1940).

1941

Clemens was at the Sakalang Teacher Station at least from 25 December 1940. She wrote, 'We (the teachers and the surrounding countryside) celebrated Christmas . . .' (Clemens corresp., 31 Dec. 1940). She stayed there at least until 4 January 1941. She wrote from A-mieng that she had stayed in Sakalang so that her tropical ulcers could heal (Clemens corresp., 2 Feb. 1941). She regarded both A-mieng and Sakalang as being in the Rawlinson Range. However, both localities are on the Sarawaged Range. Therefore, it is possible that she never visited the Rawlinson Range or if she did, then it must have been late June or during July 1941 (see itinerary for 1941). Additional information is required for the period of June/July until October 1941.

JANUARY: no collections known. 4 — Sakalang Teacher Station (Clemens corresp., 4 Jan. 1940 [1941]).

FEBRUARY: no collections known. 2–4 — A-mieng (Clemens corresp., 2 Feb. 1941).

MARCH: Clemens collected exclusively from A-mieng during March until, at least, early July. The numbering of these collections is very confused. 2 — 'a days march from Sakalang' (Clemens corresp., 2 Feb. 1941); no date — A-mieng⁴ [coll. 11805]; no date — Rawlinson Range [= ?A-mieng] [coll. 11975]; no date [?13] — [coll. 12008]; 13 — [coll. 12008a-12017, 12011a & 12011b incorrectly dated 13 May]; 14 — [coll. 12018, 41912 & 41913]; 17 — [coll. 12032]; 21 — [coll. 12039, 12041]; 25 — [coll. 12056A-12056C]; 26 — [coll. 12089bis & 12089b, numbers out of sequence]; 27 — [coll. 12080, number out of sequence]; 28 — [coll. 12087B, number out of sequence].

APRIL: many numbers not in chronological order. 3 — [coll. 12073, 12093, 12095, 12095A]; 4 — [coll. 12094, 12109–12110B]; 9 — [coll. 12119–12120]; 12 — [coll. 12042–12054, 12110C–12110F]; 14 — [coll. 12038–12038A, 12039bis & 12039a]; 16 — [coll. 12055bis–12056, 12057–12066; 12057 & 12061 (MICH) are presumably incorrectly dated 16 August]; 24 — [coll. 12090, 12090A, 12097bis & 12098]; 26 — [coll. 12098A–12107A, 12143–12143b, 12222bis & 12222a]; 28 — [coll. 12138]; 29 — [coll. 12108]; no date — [coll. 41914]; no date — Rawlinson Range (= A-mieng)[coll. s.n., BRI 63881].

MAY: many numbers not in chronological order. 8 — [coll. 12177]; 12 — [coll. 12166 & 12166a]; no date — [coll. 41915–41921]; 14 — [coll. 41922 & 41923]; 18–20 — Rawlinson Range (= ?A-mieng area) [coll. 41374–41405, presumably incorrectly dated May 1940]; 20 — Rawlinson Range (= ?A-mieng) [coll. 41406–41412]; 20 — [coll. 12200bis–12200b, 12201a, 12202, 12213A & 12214]; 21 — [coll. 12201bis, 12203bis & 12203A]; 21 — [coll. 41924]; 22 — [coll. 12206–12213bis, 12215, 12216B & 12222, 41925–41927a]; 24 — [coll. 12217bis, 12219, 12223B,

4 All the following collections are from A-mieng, unless otherwise stated.

12223C, 41928–41930]; 26 — [coll. 12221]; 27 — [coll. 12224–12234, 12236, 41931–41934]; 30 — [coll. 12235 & 12238]; 31 — [coll. 12239 & 12240].

JUNE: 3 — [coll. 12242–12248C]; no date — [coll. 41935]; 6 — [coll. 12269A–12290, 41936]; 10 — [coll. 41937]; 15 — Rawlinson Range (= A-mieng) [coll. 12311bis]; 18 — [coll. 41938]; 19 — [coll. 12295–12309, 12321–12319b, 12320–12322, 12328–12330, 41939–41942, some collections incorrectly refer to the Rawlinson Range or do not cite a collecting locality]; 27 — [coll. 12323–12327, 12332–12352, 12370–12370a, 41943–41958, some collections incorrectly refer to the Rawlinson Range]; no date — Rawlinson Range [coll. 41943]; 27 — s. loc. (Rawlinson Range) [coll. 4195B].

JULY: many numbers not in chronological order. no date — Rawlinson Range⁵ [coll. 41959 & 41960]; 2 — [coll. 12355–12357a]; 4 — [coll. 12359bis–12368, 41961]; 7 — [coll. 41963]; 8 — [coll. 12441 & 12444c]; 9 & 10 — [coll. 12374–12379]; 11 — [coll. 12383bis–12384]; 12 — [coll. 12372–12373a, 12402–12404a]; 13 & 14 — [coll. 12379a–12381]; 15 — [coll. 12446–12448]; 17 — [coll. 12401 & 12401a]; 22 — [coll. 12333d–12445F]; 25 — [coll. 12405–12407a, 12443 & 12448bis]; 28 — [coll. 12467, 12417–12431]; 29 — 12435 & 12435a]; 30 — 12433 & 12444; no date — [coll. s.n., BRI 86266; coll. s.n., PH (Pennell 1943, p. 270)].

AUGUST: 6 — [coll. 12448a–12448f]; 7 — [coll. 12472–12475, numbers not in sequence]; 8 — [coll. 12449–12470, 12478 & 12479]; 14–16 — [coll. 12485–12493]; 18 — [coll. 12496–12503e]; 22 & 23 — [coll. 12504–12507a].

SEPTEMBER: no collections known — possibly in Rawlinson Ranges.

OCTOBER: no collections known — possibly in Rawlinson Ranges. 'Late in October of 1941 . . . asked to proceed from her inland location to the coast' (Langdon 1981, p. 377). Unfortunately, the only extant notebook that covers this period has been misplaced at BRI (Johnson pers. comm., 21 June 1988). Two possible coastal (or near-coastal) destinations would be Hopoi Mission and Buso, or if she was collecting in the vicinity of Sakalang, then Lae would have been the most likely coastal destination.

NOVEMBER: 'Early in November . . . [she went to] the Lae Lutheran Mission' (Langdon 1981, p. 377), presumably by boat to Malahang or Lae (if based at Hopoi or some other coastal locality), or by foot and vehicle (if based at Buso or Sakalang). Apparently visited Boana. 3 — Boana [coll. 12788].

DECEMBER: no collections known. Langdon (1981, p. 377) notes that 'She went on collecting, drying specimens and packaging plants for transport by sea to the United States'; 17 — She noted the possibility of being evacuated to Australia; 20 — She received her evacuation orders, 'but the work of collecting and pressing specimens still went on' (Langdon 1981, p. 378); 26 — evacuated by aircraft from Lae to Port Moresby, then to Cairns (Australia).

Acknowledgements

I thank Dr R. W. Johnson (BRI) for generously allowing me access to the computer listing of Clemens's collections held at the Queensland

5 The field notes of all the following collections cite the collection locality as the Rawlinson Range, unless otherwise stated.

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